

WHAT IS CLAIMED IS:

1. A method for producing a scale provided coaxially with a conveying roller and adapted to detect conveyance rotation angle, the method comprising the steps of:

holding a recording medium conveyance outer peripheral portion of the conveying roller, and effecting rotation angle allotment for recording medium conveyance on the conveying roller to thereby form a scale for detecting conveyance rotation angle.

2. A method according to Claim 1, wherein the scale is a magnetic scale in which conveyance rotation angle allotment is effected magnetically.

3. A method for producing a scale for detecting conveyance rotation angle of a conveying roller provided in a recording apparatus adapted to perform recording on a recording medium conveyed while being held between the conveying roller and a driven roller by using a recording means, the method comprising the steps of:

holding a recording medium conveyance outer peripheral portion of the conveying roller, and effecting rotation angle allotment for recording medium conveyance on the conveying roller to thereby form a scale for detecting conveyance rotation angle.

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4. A method according to Claim 3, where in the scale is a magnetic scale in which conveyance rotation angle allotment is effected magnetically.

5 5. A method according to Claim 3 or 4, wherein
the recording apparatus is an ink-jet recording
apparatus for forming an image on the recording medium
by discharging ink.

10 6. A method according to Claim 5, wherein the recording apparatus is an ink-jet recording apparatus provided with an electrothermal converter for generating energy for discharging ink.

15 7. A method according to Claim 3 or 4, wherein,
in the recording apparatus, a detecting device for
detecting angle information provided on the scale is
provided so as to be of the same phase as the driven
roller with respect to the axis of the conveyance outer
20 peripheral portion of the conveying roller.

8. A method according to Claim 7, wherein the recording apparatus is an ink-jet recording apparatus which forms an image on the recording medium by discharging ink onto it.

9. A method according to Claim 8, wherein the

5 10. A method according to Claim 3 or 4, wherein,
in the recording apparatus, a detecting device for
detecting angle information provided on the scale is
provided so as to be of the same phase as the driven
roller with respect to the axis of the conveyance outer
0 peripheral portion of the conveying roller and as to be
situated at a fixed distance from the recording means
with respect to the recording medium conveying
direction.

20 12. A method according to Claim 11, wherein the recording apparatus is an ink-jet recording apparatus provided with an electrothermal converter for generating energy for discharging ink.

25 13. A method for producing a scale provided
coaxially and integrally with a conveying roller and
adapted to detect conveyance rotation angle, the method

comprising the steps of:

integrating the conveying roller with a conveyance angle detection pattern writing member coaxially mounted with the conveying roller; and

5 holding a recording medium conveyance outer peripheral portion of the conveyance roller integrated with the conveyance angle detection pattern writing member, and performing rotation angle allotment on the conveying roller to form a scale for detecting
10 conveyance rotation angle.

14. A method according to Claim 13, wherein the scale is a magnetic scale formed by magnetically effecting conveyance rotation angle allotment.

15 15. A method according to Claim 13 or 14, wherein the writing member is integrally provided with a conveying roller drive transmitting means.

20 16. A method for producing a scale for detecting conveyance rotation angle of a conveying roller provided in a recording apparatus adapted to perform recording on a recording medium conveyed while being held between the conveying roller and a driven roller
25 by using a recording means, the method comprising the steps of:

integrating the conveying roller with a conveyance

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angl d tectlon pattern writing member coaxially
mounted with the conveying roller; and

holding a recording medium conveyance outer
peripheral portion of the conveyance roller integrated
5 with the conveyance angle detection pattern writing
member, and performing rotation angle allotment on the
conveying roller to form a scale for detecting
conveyance rotation angle.

10 17. A method according to Claim 16, wherein the
scale is a magnetic scale formed by magnetically
performing conveyance angle allotment.

15 18. A method according to Claim 16 or 17, wherein
the recording apparatus is an ink-jet recording
apparatus which forms an image on the recording medium
by discharging ink onto it.

20 19. A method according to Claim 18, wherein the
recording apparatus is an ink-jet recording apparatus
provided with an electrothermal converter for
generating energy for discharging ink.

25 20. A method according to Claim 16 or 17, wherein
the writing member is integrally provided with a
conveying roller drive transmitting means.

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22. A method according to Claim 21, wherein the recording apparatus is an ink-jet recording apparatus provided with an electrothermal converter for generating energy for discharging ink.

23. A method according to Claim 16 or 17, wherein, in the recording apparatus, a detecting device for detecting angle information provided on the scale is provided so as to be of the same phase as the driven roller with respect to the axis of the conveyance outer peripheral portion of the conveying roller.

24. A method according to Claim 23, wherein the recording apparatus is an ink-jet recording apparatus which forms an image on the recording medium by discharging ink onto it.

25. A method according to Claim 24, wherein the recording apparatus is an ink-jet recording apparatus provided with an electrothermal converter which generates energy for discharging ink.

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26. A method according to Claim 16 or 17,
wherein, in the recording apparatus, a detecting device
for detecting angle information provided on the scale
is elastically biased against the scale and arranged so
5 as to be at a fixed distance from the recording means
with respect to the recording medium conveying
direction.

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27. A method according to Claim 26, wherein the
10 recording apparatus is an ink-jet recording apparatus
which forms an image on the recording medium by
discharging ink onto it.

28. A method according to Claim 27, wherein the
15 recording apparatus is an ink-jet recording apparatus
provided with an electrothermal converter which
generates energy for discharging ink.

29. A recording apparatus comprising:
20 conveying means having a conveying roller
manufactured by a method as defined in claim 1 and a
pinch roller in a close contact with said conveying
roller; and
detecting means for detecting a rotational angle
25 of said conveying means,
wherein a recording medium conveyed by said
conveying means is recorded by recording means.

30 A recording apparatus according to claim 29,
wherein said detecting means is biased to a magnetic
scale of said conveying means to maintain a distance to
said recording means constant in a recording medium
5 conveying direction.

31. A recording apparatus according to claim 30,
wherein said recording apparatus is an ink jet
recording apparatus for discharging ink on the
10 recording medium to form an image.

32. A recording apparatus according to claim 31,
wherein said recording apparatus is an ink jet
recording apparatus having an electrothermal converting
15 member for generating energy utilized to discharge ink.

33. A recording apparatus comprising:
conveying means having a conveying roller
manufactured by a method as defined in claim 3 and a
20 pinch roller in a close contact with said conveying
roller; and

detecting means for detecting a rotational angle
of said conveying means,

wherein a recording medium conveyed by said
25 conveying means is recorded by recording means.

34. A recording apparatus according to claim 33,

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wherein said detecting means is biased to a magnetic scale of said conveying means to maintain a distance to said recording means constant in a recording medium conveying direction.

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35. A recording apparatus according to claim 33, wherein said recording apparatus is an ink jet recording apparatus for discharging ink on the recording medium to form an image.

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36. A recording apparatus according to claim 35, wherein said recording apparatus is an ink jet recording apparatus having an electrothermal converting member for generating energy utilized to discharge ink.

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37. A recording apparatus comprising:
conveying means having a conveying roller manufactured by a method as defined in claim 13 and a pinch roller in a close contact with said conveying roller; and

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detecting means for detecting a rotational angle of said conveying means,

wherein a recording medium conveyed by said conveying means is recorded by recording means.

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38. A recording apparatus according to claim 37, wherein said detecting means is biased to a magnetic

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scale of said conveying means to maintain a distance to said recording means constant in a recording medium conveying direction.

5 39. A recording apparatus according to claim 38, wherein said recording apparatus is an ink jet recording apparatus for discharging ink on the recording medium to form an image.

10 40. A recording apparatus according to claim 39, wherein said recording apparatus is an ink jet recording apparatus having an electrothermal converting member for generating energy utilized to discharge ink.

15 41. A recording apparatus comprising:
conveying means having a conveying roller manufactured by a method as defined in claim 16 and a pinch roller in a close contact with said conveying roller; and

20 detecting means for detecting a rotational angle of said conveying means,

wherein a recording medium conveyed by said conveying means is recorded by recording means.

25 42. A recording apparatus according to claim 41, wherein said detecting means is biased to a magnetic scale of said conveying means to maintain a distance to

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43. A recording apparatus according to claim 42, wherein said recording apparatus is an ink jet recording apparatus for discharging ink on the recording medium to form an image.

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